

What is claimed is:

1. A collapsible display deformable between an expanded configuration with a greater visible area and a collapsed configuration with a smaller visible area, the collapsible display comprising:

at least three collapsible sections, including at least one display section, coupled such that when the collapsible display is in the expanded configuration, each of the collapsible sections has a first end adjacent to another of the collapsible sections, the adjacent ends substantially aligned along an axis, and each display section further has a second end that is substantially opposite to the first end and substantially oblique relative to the first end.

2. The collapsible display of claim 1, further comprising a pivot to which each display sections is connected and about which each display section can rotate.

3. The collapsible display apparatus of claim 2, wherein at least one of the display sections is rotatable between:

a first position about the pivot in which the display section overlaps significantly with another of the display sections such that the display sections occupy the smaller visible area, and

a second position about the pivot where the display sections occupy the greater visible area.

4. The apparatus of claim 2, wherein at least one of the display sections is rotatable between a first position about the pivot in which the collapsible display occupies the smaller visible area, and a second position about the pivot where the collapsible display occupies the greater visible area.

5. The display apparatus of claim 1, further comprising a hinge element for enabling the display sections to rotate on an axis; two opposing panels; an additional hinge element for connecting adjacent sides of the two opposing panels and further for allowing the two opposing panels to rotate between an open position and a closed position, wherein the display sections are coupled to the two opposing panels such that the display sections are collapsed when the two opposing panels are in the closed position and the display sections are expanded when the two opposing panels are in the open position.

6. The display apparatus of claim 1, further comprising a section of a flexible display membrane secured to each of the display sections.

7. The display apparatus of claim 6, said display membrane comprising an electric paper.

8. The display apparatus of claim 6, further comprising an electronic device for providing display instructions to the display membrane.

9. The display apparatus of claim 8, said electronic device comprising at least one of:

a portable computing device, a television, a wireless communication device, a cellular telephone, a satellite telephone, a display controller, a wireless receiver and a personal digital assistant.

10. The display apparatus of claim 8, said electronic device comprising a display wand for addressing the visual display elements of at least a portion of the display membrane.

11. The display apparatus of claim 8, wherein the display section extends from one of: a side and a corner of the electronic device.

12. The apparatus of claim 8, wherein the collapsed display membrane is at least partially retractable into a body of the electronic device.

13. The display apparatus of claim 6, the display membrane comprising a plurality of pixels forming a visual display area having a display layer.

14. The display apparatus of claim 13, the display membrane further comprising a control layer for addressing the plurality of pixels.

15. A collapsible display deformable between an expanded configuration with a greater visible area and a collapsed configuration with a smaller visible area, the collapsible display comprising:

    a flexible display membrane, and  
    at least one support member connected to the flexible display membrane, for supporting a portion of the flexible display membrane during an out-of-plane deformation.

16. The display apparatus of claim 15, further comprising  
    a pivot, and each support member connected to the pivot about which the support member can rotate.

17. The display apparatus of claim 15, said at least one support member is rotatable between a first position about the pivot, in which the portion of the flexible display membrane overlaps significantly with a second portion of the flexible display membrane such that the flexible display membrane occupies a smaller visible area, and a second position about the pivot in which the first and second portions of the flexible display membrane occupy a greater visible area.

18. The display apparatus of claim 15, further comprising  
two opposing panels; and  
a hinge element for connecting adjacent sides of the two opposing panels and  
further for allowing the two opposing panels to rotate between an open position and a closed  
position, wherein the flexible display membrane is secured to the two opposing panels at a  
plurality of positions such that the at least one display section is collapsed when the two  
opposing panels are in the closed position and the at least one display section is expanded  
when the two opposing panels are in the open position.

19. The display apparatus of claim 15, wherein the at least one support member is  
secured to positions along an outer periphery of the flexible display membrane

20. The display apparatus of claim 15, further comprising  
a hub, wherein the at least one support member is connected to the hub at a  
first end and secured to positions along an outer periphery of the flexible display membrane  
at a second end such that each support member is rotatable between a first position about the  
hub where each support member is substantially parallel to each other and the flexible display  
membrane is collapsed to a smaller visible area and a second position about the hub where  
the flexible display membrane forms at least a portion of a visible area having a greater  
visible area.

21. The display apparatus of claim 15, further comprising:

a deformable rim forming an outer periphery of the flexible display membrane, wherein the at least one support member is secured to positions along the deformable rim and the deformable rim is biased to allow a section of the flexible display membrane to be twisted about at least one axis to form the collapsed configuration and untwisted about the at least one axis to form the expanded configuration.

22. The display apparatus of claim 15, further comprising an electronic device for providing display instructions to the display membrane.

23. A display apparatus, comprising:

a display membrane having at least one individually-deformable section, wherein when an individually-deformable section is collapsed, the collapsed section forms a first geometric configuration having a first area, and when the collapsed section is expanded, the expanded section forms a second geometric configuration having a second area greater than the first area.

24. The display apparatus of claim 23, comprising:

a plurality of support members for supporting the display membrane, each support member having a first end connected to a pivot point about which the support member may rotate to expand and collapse the at least one individually-deformable sections of the display membrane.

25. The display apparatus of claim 24, each of the expanded sections forming a fan-shaped display.

26. The apparatus of claim 23, further comprising:  
a deformable rim around the section of the display membrane, wherein the deformable rim is biased to allow the section to be twisted about at least one axis to form a collapsed position and untwisted about the at least one axis to form a visual display area.

27. The display apparatus of claim 23, further comprising:  
two opposing panels;  
a hinge for connecting adjacent sides of the two opposing panels for allowing the two opposing panels to rotate between an open position and a closed position; and  
a section of the display membrane connected to at least one of the opposing panels, wherein the section is deformed when the two opposing panels are in the closed position and the section is unfolded when the two opposing panels are in the open position to form a display area.

28. The apparatus of claim 23, further comprising:  
a display hub for connecting the at least one individually deformable section of the display membrane; and  
at least one support member for expanded and collapsing the at least one individually-deformable section between the first and the second geometric configurations about the hub.

29. A method for operating a foldable display, comprising:
  - rotating a support member for a display from a first position to a second position about a pivot to expand at least a portion of a visual display; and
  - rotating the support member from the second position to the first position to collapse the visual display.
  
30. A method for operating an electronic display, comprising:
  - unfolding a pair of opposing hinged panel sections, at least one of the hinged panel sections connected to a section of a display membrane that is unfolded in an opposite position from the pair of opposed hinged panel sections to form a display area; and
  - folding the pair of opposing hinged panel sections, thereby collapsing the display area.